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ABSTRACT

The extent of worker training in the United States is described, with information about the literacy level of job seekers. Major policy options available for increasing the investment in skills and literacy are discussed. Most data come from surveys by the U.S. Department of Labor. Data indicate that 2 of 5 workers received skill-improvement training, with this training concentrated in the 35- to 54-year-old group. Those who already had the most information, however, were those who had already received the greatest education. One in three workers received neither training to qualify for the job they held nor training to improve skills. Information training has long been the largest source of skill-improvement training, but formal programs are on the increase. A sample of 20 million participants in unemployment insurance programs or other job training programs was given an assessment of prose, document, and quantitative literacy. Results document the need for additional literacy training for large sections of the job seeking population. The knowledge base about investment in training is weak, but less appears to be spent on training in the United States than in competing countries. Employers apparently spend very little of the training budget on remedial education for workers. Different ways of increasing the training budget are discussed. Twelve figures and two tables present information from the various studies. (SLD)

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POLICY INFORMATION REPORT

TRAINING TO BE COMPETITIVE

Developing the Skills and Knowledge of the Workforce

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
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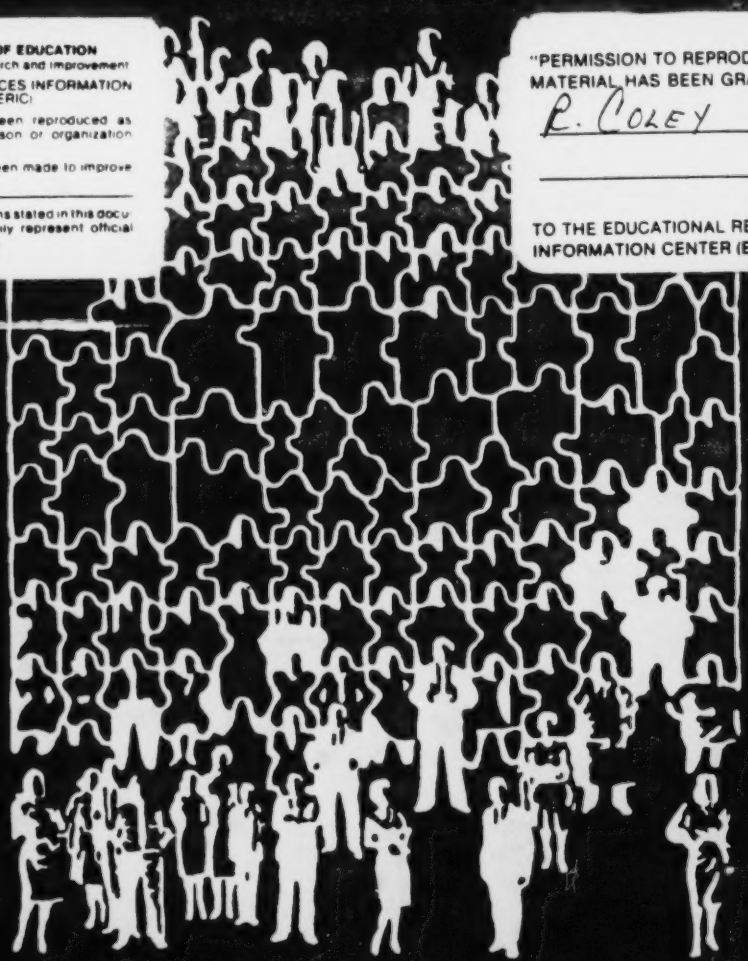

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Preface

This report is about the investment America makes in the skills and literacy of its employed workforce. The importance of a skilled workforce was underlined in the National Education Goals for the year 2000, set in 1989 by the President and the nation's governors:

All workers will have the opportunity to acquire the knowledge and skills, from basic to highly technical, needed to adapt to emerging new technologies, work methods, and markets through public and private educational, vocational, workplace, or other programs (Goal 5).

Training to be Competitive draws on data that have recently become available to describe the extent of worker training in the U.S. and the literacy level of job seekers. It also describes the major policy options available for increasing this investment in light of conclusions of major study commissions that the current level is inadequate to enable the U.S. to raise productivity and improve its competitive position in world markets. Some of these options, although standard fare in other countries, are untried in the U.S., while others are employed in one or more of the states. The purpose of this report is to inform debate about the training of the American workforce, as well as to convey the nature of policy options under discussion. While it describes some advantages and drawbacks of these options, it is not the purpose of this report to advocate a particular policy. It is the case, however, that the author's viewpoint is one of agreement that the U.S. investment in the skills of the workforce is insufficient, relative to that of the nations with which it competes, and that we have a long way to go to meet the goal set for the year 2000.

Paul E. Barton
Director

Acknowledgments

We are indebted to the comprehensive survey of worker training conducted by the U.S. Department of Labor in 1991 for a large share of the information in this report about the extent and sources of training. For information on the literacy of job seekers, we relied heavily on the assessment conducted by Educational Testing Service under contract with the Department of Labor. While several other sources were valuable in this endeavor, the most comprehensive investigation and analysis is the assessment by the Congressional Office of Technology Assessment, in its report, *Worker Training: Competing in the New Economy*, issued late in 1990.

The report was reviewed by Evelyn Ganzglass of the National Governor's Association, Wendell Fletcher and Margaret Hilton of the Office of Technology Assessment, and Archie Lapointe and Judith Norback of Educational Testing Service.

Richard J. Coley created the charts and graphs, and provided editorial assistance. Albert Benderson did the final editing, Ricardo Bruce was the designer, and Carla Cooper provided word processing services.

Foreword

In *Training to be Competitive*, Paul Barton provides all of us with an easily understood analysis of our nation's level of investment in training. In reading this report, we find most of the information available about who provides training, to whom, and for how much.

But what is most telling is what is not here. As a nation, we have done little to collect the data that can best guide our future public policy positions or company actions. For instance, we do not have an accurate picture of how much our companies invest in formal or informal training. Nor do we know the skills our jobs require, so the size of our training gap can only be surmised. Nor are we clear about what we have tried to measure. Our definitions are so poor, for example, that we do not know whether our data on corporate literacy training reflect investment in basic skills training or "literacy" training for scientists and executives.

As Barton points out, the failure to measure our training investment is an indication of the importance our nation has assigned to it. Not only because Americans only do what we measure, as Senator Daniel Moynihan has often stated, but because we cannot act effectively without better information about the requirements of our workplaces and the relative merits of different public and private sector responses to meet workplace needs. Barton has awakened us to place greater emphasis on capturing information in this vitally important area.

While more data are needed, we cannot wait to act. Here again we can thank the report for describing options for our consideration.

Training to be Competitive reminds all of us what we know and don't know about training in this country. It also tells us that the status quo will not get us where we want to be. In an era in which a growing body of analysis and corporate experiences tells us we cannot be competitive without our companies reorganizing into workplaces built on highly skilled workers, this report has done us a service. It is important reading for all of us who want to act expediently.

William H. Kolberg
President
National Alliance of Business

Training the Workforce

- Two out of five workers employed (41 percent) in 1991 received skill-improvement training, an increase from 35 percent in 1983. The gains were concentrated in the 35- to 54-year-old group. Only 18 percent of 16- to 19-year-olds received skill-improvement training.
- Workers who already had the most education were the ones who got the most skill-improvement training on the job. This gap by education level widened from 1983 to 1991.
- "Frontline" workers received just 17 percent of the skill-improvement training, down from 22 percent in 1983. Executive, professional, and technical workers received the most training to improve their skills.
- One in three American workers received neither training to qualify for the job they hold nor training to improve their skills, and three in ten received both. Half of frontline workers, such as machine operators, assemblers, inspectors, transportation and material movers, received neither; about one in seven received both. The story was similar for service workers.
- While informal, on-the-job training has historically been the largest source of skill-improvement training, formal company training programs pulled even with them in 1991, and these formal programs were longer in duration.
- Skill-improvement training for employed workers was about the same for males and females, and was higher for White workers than for minorities.
- Fifty-seven percent of people employed in 1991 said they needed training to qualify for their jobs, about the same as in 1983, when 55 percent needed training.
- Just one in four employed 16- to 19-year-olds said they needed training to qualify for their jobs, as did just under half of 20- to 24-year-olds.

Literacy of Job Seekers

A sample of 20 million job seekers was given an assessment measuring prose literacy, document literacy, and quantitative literacy in 1990. All were participating in Unemployment Insurance (UI), the Employment Service (ES), or the Job Training Partnership Act (JTPA) programs. All were measured on a scale of 0 to 500 and classified into five levels of literacy.

- For Prose Literacy
  - Twelve percent of the ES/UI population was at the lowest level (Level 1, 225 or lower), where they could do such things as find a single piece of information in a sports article.*
  - Twenty-five percent of the ES/UI and JTPA populations reached Level 2 (from 226 to 275), where they could interpret a directive in an appliance warranty.
- For Document Literacy, the kind most relevant to the workplace
  - Thirteen and 14 percent of the ES/UI and JTPA populations, respectively, were at Level 1 (225 or lower), where they could perform tasks such as signing their name to a Social Security card or completing a section on a job application. They are likely to have continuing difficulty in securing stable employment with adequate earnings.
  - While, overall, one in eight were at Level 1 of Document Literacy, about three in 10 minority job seekers in ES/UI were at this low level, as were more than a quarter of JTPA enrollees, and more males were at this level than females.
  - Thirty percent of ES/UI recipients and 37 percent of JTPA enrollees were at Level 2 (226 to 275), where they could perform tasks such as underlining a sentence on a child's dosage chart that tells how often to give a medicine, or identifying "gross pay for this year-to-date" on a pay stub.
  - By occupation, the average Document Literacy score ranged from 262 for service occupations to 313 for managerial occupations.
- The factors that made a difference in literacy levels:
  - Family background, particularly parent education, was predictive of the extent of reading materials in the home.
  - Access to reading materials in the home (independent of parent education) had a significant impact on the choices made in selecting the academic curriculum in the high school, and the more rigorous the curriculum, the higher the literacy.

*People at the levels described are estimated to have an 80 percent chance or better of being able to successfully perform the tasks described.

- The results were consistent with the hypothesis that reading practices, such as reading the news section of the newspaper, improved literacy proficiency.
- Having access to reading materials, and reading them, affected the level of literacy achievement, and higher literacy was associated with attaining better jobs with higher income.

Options for Action

Are we doing enough training, and what are the options for increasing the investment in the training of the current workforce?

- The knowledge base about current investment in training is weak. Employers do not keep complete records on the cost of training, particularly of on-the-job training. National surveys are infrequent and somewhat superficial.
- Based on U.S. estimates, we spend less on training than the nations with which we compete. The Office of Technology Assessment (OTA) concludes: "When measured by international standards, most American workers are *not* well trained. Our major foreign competitors place much greater emphasis on developing workforce skills at *all* levels."
- A series of prestigious commissions and studies have recommended that the U.S. increase its investment in training in order to raise productivity and improve our competitive position.
- Different ways of increasing the training investment have been discussed:
  - *voluntary* action on the part of U.S. employers.
  - a *tax credit* for investments employers make in training, similar to the tax credits for plant and equipment or for research and development, which have been employed at various times.
  - a *levy-offset* system, in which, through the tax system, employers have to spend a specified percentage of payroll on training their workers. To the extent it is not spent, the government collects it and spends it on training.
  - *an earmarked payroll tax*, where the taxes collected are spent on training. Five states have such a tax, as an adjunct to the Unemployment Insurance System.
  - *State economic development strategies* employing a variety of approaches that typically use state funds appropriated for economic development. About 44 states operate one or more customized training programs, spending about $375 million per year (based on a 1990 study).
- With regard to employer investment in literacy training, an OTA study has concluded that: "Contrary to the claims sometimes made, firms in most industries probably spend very little of the total training budget on remedial education, opting instead to rely on outside publicly supported federal, state, and local basic education." The OTA also found that about 30 states have established bodies to coordinate literacy programs, and several states have launched workforce literacy initiatives to complement general literacy efforts, such as those in Massachusetts, Illinois, and South Carolina.

INTRODUCTION

A drumbeat of reports, commissions, and studies has been telling America that one key to becoming competitive in the world economy is improving the skills of the workforce and that compared to our competitors we do, on average, a mediocre job. To be sure, training varies from excellent to practically nonexistent. Overall, the situation is serious enough that we have National Education Goals, set by President Bush and all the governors in 1989, to improve worker training and literacy by the year 2000. President Clinton, as governor, was heavily involved in this goal-setting process. Since most of the workforce of the year 2000 are people employed today, the education reform movement for school-age youth cannot be relied upon to meet the goal; it is the workers now on the job who will need the training and skills.

The emerging importance of training is not matched by the availability of data about its nature and extent. National data are collected infrequently, and American employers pay little attention to recording the full cost of the training that does occur, particularly that which takes place on the job. The failure to measure the training investment is one indication of the importance assigned to it. As Daniel Patrick Moynihan has said, in America we only do what we measure.

It is the availability of new data on training, collected in 1991 and 1990, that prompted this report on the training of the American workforce. These national surveys provide snapshots of the workforce as the decade begins and can be the basis for setting specific goals to be achieved by the end of the decade.

The first section of this report provides a picture of the quantity and types of training available to employed workers. It does not have, however, the sharp focus (nor closeup) that would tell all we need to know; those kind of studies and surveys are yet to be developed and fielded. Most of the data in this section come from a household survey conducted by the U.S. Department of Labor in 1991 (the data became available in 1992). The survey asked currently employed workers about the training they needed to qualify for the jobs they have and whether they have received any training on their current job to improve their skills.

The second section describes the literacy of job seekers, people seeking employment through programs of the U.S. Department of Labor. Specifically, it is based on a literacy assessment given to a representative sample of the 20 million people in the Unemployment Insurance, the Employment Service, and the Job Training Partnership Act Programs. It was carried out by Educational Testing Service, under contract with the U.S. Department of Labor.

The third section explores the "options for action" to increase the investment in training. It describes some of the considerations involved in decisions to expand training and the major options open to government to stimulate more training investment, as well as advantages and drawbacks of different approaches.

TRAINING THE WORKFORCE

Training to Qualify for a Job

In 1983 and 1991 the U.S. Department of Labor asked a national sample of workers this question: "Did you need specific skills or training to obtain your current job?" Those responding affirmatively were asked more questions about where they received those skills or training and who paid for it.

The need for training was virtually constant from 1983 to 1991: 55 percent needed it to qualify for their jobs in 1983 and 57 percent in 1991 (representing 54 million and 65 million workers respectively). Training could come from any source — from a high school or post-high school vocational program, a community college or technical institute, a four-year college program, a formal company training program, informal on-the-job training (experience), or from other sources.* Survey respondents included people who graduated from professional schools, as well as people, such as cashiers or service station attendants, who learned their jobs through a few days (or hours) of informal instruction. While this diversity can make interpreting the survey's results difficult, the results *do* tell us that more than four in 10 workers needed *no* training at all to get the job they were holding at the time of the survey.

The variation in the need for training to get jobs is extreme, ranging from 93 percent of workers with a "professional specialty" down to 10 percent. While the high ratio for executive, professional, and technical jobs is expected, would we expect such *low* rates among some occupations critical to competing abroad, or in view of low productivity gains over the last 20 years? There are no baselines here with which to compare, but the low rates of training seem striking:

- 37 percent in services (except household)
- 38 percent among machine operators, assemblers, and inspectors
- 43 percent in sales occupations

While we do not generally have comparable statistics with which to compare ourselves to competitor nations, it is known that we do less training of entering workers. For example, Anthony Carnevale, of the American Society for Training and Development, citing a Congressional Office of Technology Assessment (OTA) study, said recently: "Japanese auto workers ... get more than 300 hours of training when they are first hired, compared to only 50 hours of entry-level training for American auto workers." Margaret Hilton, of OTA, reports that West German employers annually spend an average of $4,447 per apprentice worker (age 16 to 19), compared to $263 per average worker in the U.S.

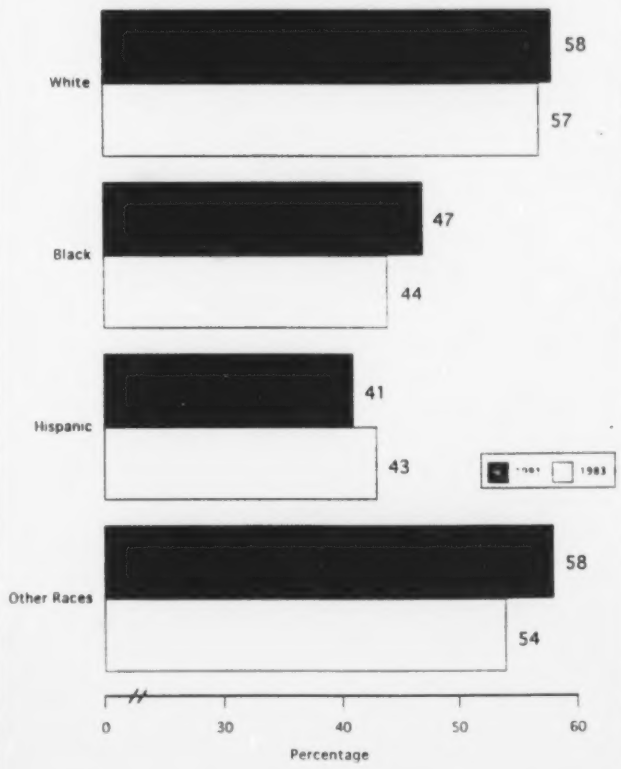
Training requirements also vary by age. In 1991 just one in four employed 16- to 19-year-olds said they needed training to qualify for their jobs, unchanged from 1983. Of course, many of these were students working part-time. For those more likely to be out of school (those in the age 20 to 24 group), just under half (46 percent) needed training, also unchanged from 1983. The percent rose to 63 by age 35-44, dropping slightly by age 45-54 (60 percent), dropping to just over half at age 55-64 (53 percent), and to 44 percent at age 65 and over. There was little change for any of the age groups between 1983 and 1991.

There was no difference between males and females in job training requirements. However, there were considerable differences by race/ethnicity, reflecting, among other things, the differences in the ethnic and racial distributions of workers in different occupations (See Figure 1). In 1991, the percentage of White workers needing

*The armed forces, a correspondence course, from a friend or relative, or other experience.

Figure 1

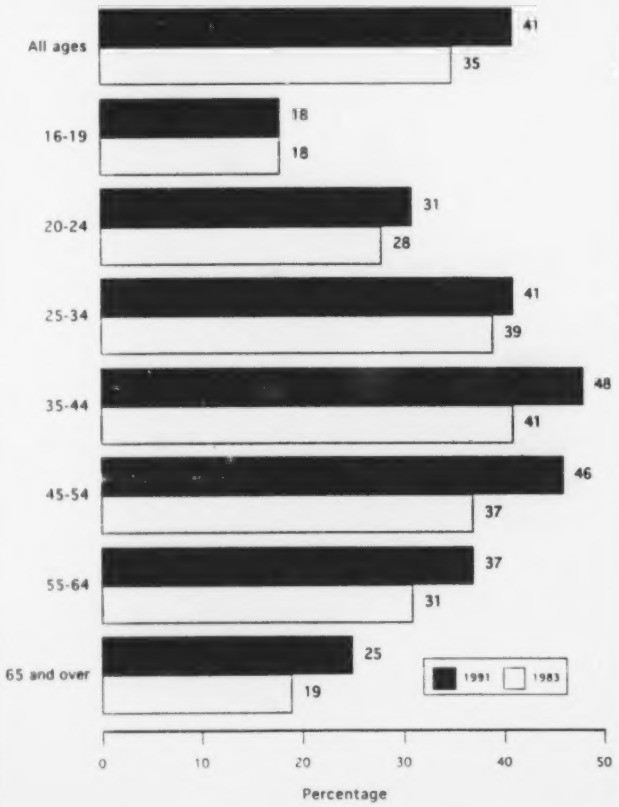
Percentage Needing Training to Qualify for their Job, by Race/Ethnicity, 1983 and 1991



Source: "How Workers Get Their Training: A 1991 Update," U.S. Department of Labor, Bureau of Labor Statistics, August 1992.

Figure 2

Percentage of Empoyed Workers Receiving Skill-Improvement Training on Current Job, by Age, 1983 and 1991



Source: "How Workers Get Their Training: A 1991 Update," U.S. Department of Labor, Bureau of Labor Statistics, August 1992.

training to qualify for their jobs was 11 percentage points higher than for Black workers, and 17 points higher than for Hispanic workers. The percentage for Blacks rose slightly from 1983 levels, and the percentage for Hispanics fell slightly.

Just four in 10 workers with a high school education needed to be trained to qualify for their jobs, compared to more than six in 10 with some college education, and over eight in 10 with college degrees.

Where do workers who need training get it? The predominant source for 33 percent of all workers was school, followed by informal on-the-job training for 27 percent, formal company training for 12 percent, and other sources for 10 percent.* The formal company programs tended to be of short duration: almost half took under 12 weeks, with only a quarter taking longer than 25 weeks.

*Armed Forces, 2 percent; correspondence courses, 1 percent; and friends, relatives or other non-work training, 7 percent.

Skill-Improvement Training

Many point out that today's workers will represent the great majority of the labor force in the year 2000. Improving the training of entry workers will eventually improve the employment prospects of young workers who do not pursue college. Substantial improvement in worker

skills in the short run, however, will have to come from training experienced workers.

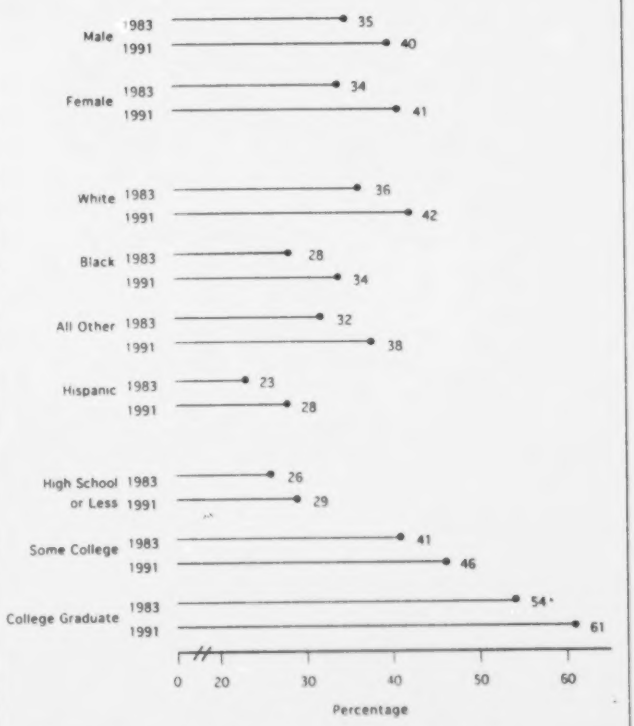
In 1991 only two out of five employees had received "skill-improvement training" since taking their current jobs, as defined and measured by the U.S. Department of Labor household survey. The question of how many *should* have received such training in the workforce as a whole is a hard one to answer. Nevertheless, a nontraining rate of 60 percent seems fairly high.

The good news is that there is modest improvement. The percentage receiving such training rose from 35 percent in 1983 to 41 percent in 1991, and the number rose from 34 million to 47 million. As can be seen in Figures 2 and 3, the gains were widespread by age, sex, race/ethnicity and education.

- Workers aged 25-54 had the most training. From 1983 to 1991, workers from ages 35 to 54 showed the largest gains, with a training rate reaching 48 percent for those from age 35 to 44 (See Figure 2). However, only 18 percent of employed 16- to 19-years-olds received skill-improvement training, less than the 25 percent of those age 65 and over. There was no improvement during the eight years. The survey confirms the small amount of training that young workers in our system get and demonstrates that we are making no progress at this critical age, when youth need to acquire employment skills and get established in the workforce.
- By sex, the training rates are basically the same, as is the degree of improvement (See Figure 3).
- By race/ethnicity, a well known pattern emerges: Whites get more than minorities. The gains for all groups since 1983, however, were about the same (See Figure 3).
- By education, those who have the most education also get the most training. The advantage for college graduates is striking — 61 percent of college graduates received skill-improvement training, *double* the percentage for those with a high school education or less, and 15 percentage points higher than workers with some college. The gains from 1983 were greater for those with the most education, *and the gap by education level widened* (See Figure 3).

Figure 3

Percentage of Employed Workers Receiving Skill-Improvement Training on Current Job, by Sex, Race/Ethnicity, and Education, 1983 and 1991

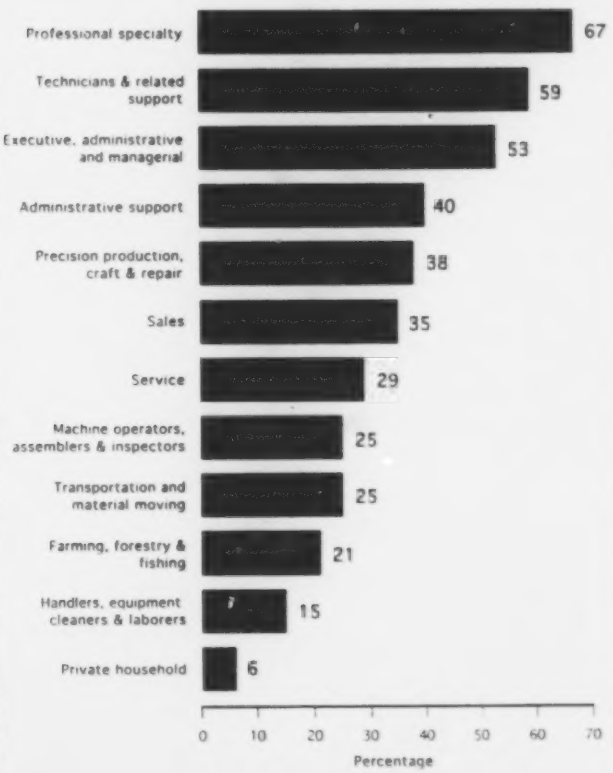


Source: "How Workers Get Their Training: A 1991 Update," U.S. Department of Labor, Bureau of Labor Statistics, August 1992.

Given the high training rates for the college educated, it is no surprise that those with a professional specialty had the highest rates by occupation, reaching 67 percent. The rates by occupation are shown in Figure 4.

It is well known that, in American industry, it is the professional, technical, and managerial workers who get the skill-improvement training; we are not likely lagging behind our competitors in this department, at least in the quantity of training. But there is a growing consensus that we do lag considerably in developing the workforce on the front lines; that our human capital investment will be a key to increased productivity; and that we will have to ask more of front line workers as we form them into teams, expect them to solve problems, and be creative. Our training model has fit our production model — a model of substituting machines for workers, breaking jobs down to the

Figure 4
Skill-Improvement Training Rate by Occupation, 1991



Source: "How Workers Get Their Training: A 1991 Update," U.S. Department of Labor, Bureau of Labor Statistics, August 1992.

point where thinking workers are least needed and relying on electronic decision makers where possible. In a "high performance" model this all changes; so does the need for training.

The numbers above show how far we are from this high-skill model: three out of four machine operators, assemblers, and inspectors have not received skill-improvement training in their current job. The nontraining rate is the same for transportation and material-moving occupations, and holds steady for fully 85 percent of handlers, equipment cleaners, and laborers. Productivity in the service sector is not helped by the fact that 65 percent of sales workers and 61 percent of workers in service occupations did not receive training to improve their skills.

The *gains* in skill improvement training from 1983 to 1991 went to those who received the most training. For example, the amount of training for professionals, executives, and technicians jumped six or seven percentage points, compared to three points for machine operators and assemblers, precision production workers, craftworkers, and repair workers. So the gap widens. There were, however, large gains in training opportunities (from 32 to 40 percent) for those in administrative support occupations, likely reflecting the need to master rapidly advancing technology in the office.

The net of it is that the four categories of workers we call "frontline" received just 17 percent of all skill-improvement training in 1991, *down* from 21 percent in 1983 (a larger drop than their decline as a percentage of all workers, from 28 percent to 26 percent.)* Executives, professionals and technicians accounted for 46 percent of all training, *up* from 42 percent in 1983. Other shares were largely unchanged.

Another window on the extent of training is the frequency of getting both qualifying training *and* skill-improvement training, or getting neither (See Figure 5). *One in three American workers gets neither, and three in ten get both.* Again, executives, professionals and technicians lead. And again, frontline workers lag. Half of machine operators, assemblers, inspectors, transportation and material movers get neither, while just 12 and 15 percent get both. Service workers fared about the same.

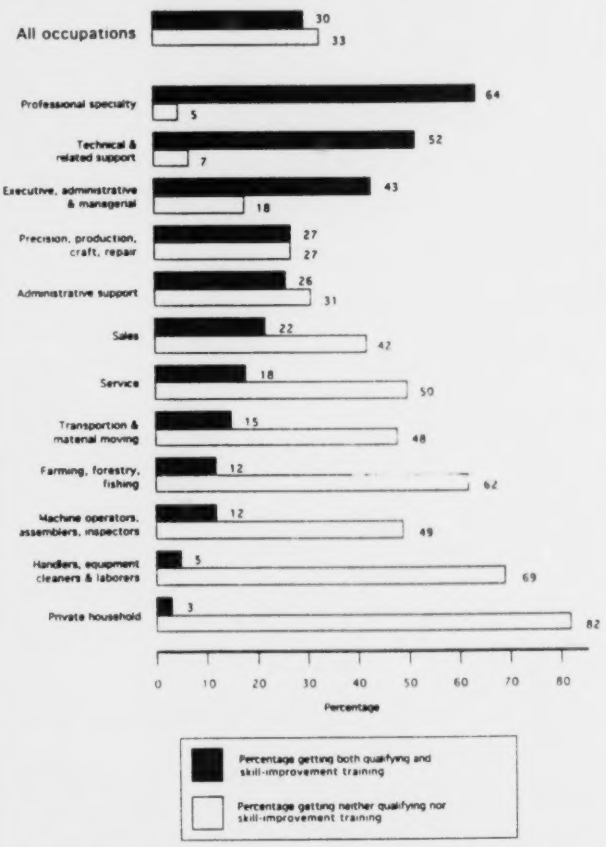
Sources of Training

Historically, in the United States, the most frequent source of skill-improvement training for those currently employed has been informal on-the-job training (OJT) — working at the job with an experienced worker doing the instructing. This was still true in the 1983 survey, but is no longer true for the economy as a whole, as can be seen in Figure 6. The jump has come in formal company training programs with 16 percent of all workers trained that way in 1991, topping informal OJT by a percentage point and school training by three percentage points. The greater growth of formal programs though was in public sector employment; in private industry OJT tops formal programs by a point. Schools provide training less frequently for the private sector than for the public.

*As used here, "frontline" workers include the occupations of precision production, craft, repair, machine operators, assemblers, inspectors, transportation, moving, handlers, equipment cleaners, and laborers.

Figure 5

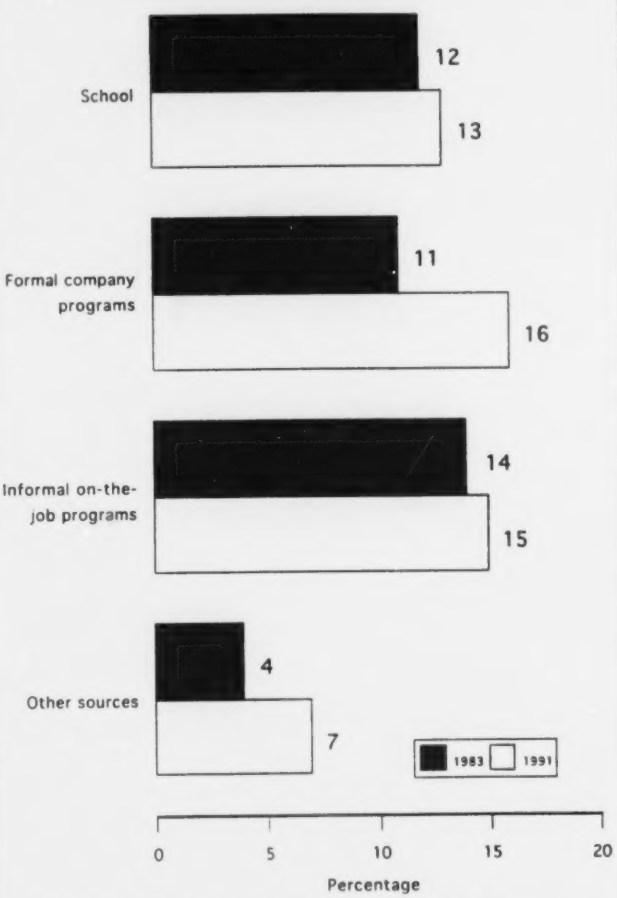
Percentage of Workers Getting Both Qualifying and Skill Improvement Training and Percentage of Workers Getting Neither, by Occupation



Source: "How Workers Get Their Training: A 1991 Update," U.S. Department of Labor, Bureau of Labor Statistics, August 1992.

Figure 6

Sources of Training, 1983 and 1991



Source: "How Workers Get Their Training: A 1991 Update," U.S. Department of Labor, Bureau of Labor Statistics, August 1992.

The bulk of school training is equally divided between junior or four year (or longer) college programs.

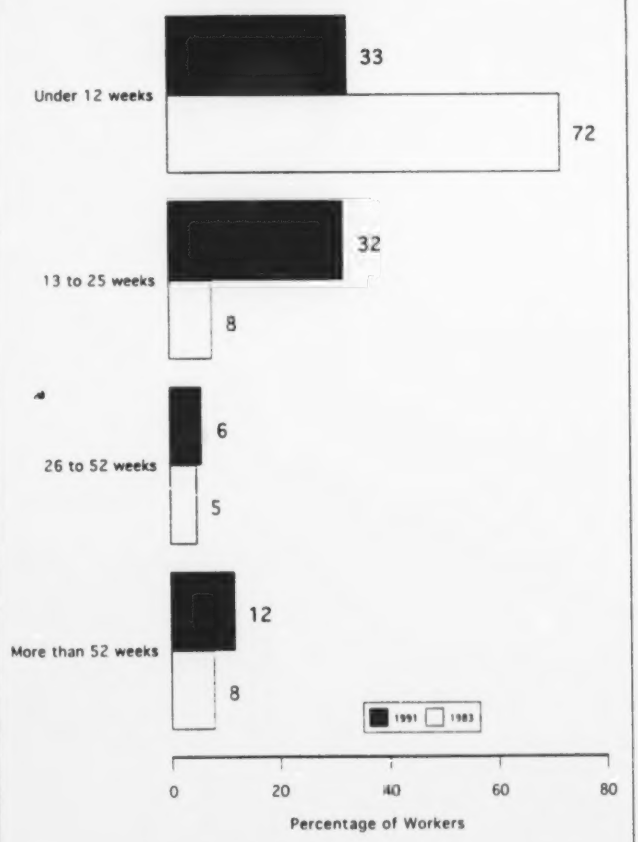
Schools were the most frequent training source for professionals. Formal company programs provided training most frequently for executives, technicians, sales workers, precision production, and craft workers (the latter only by one point over OJT). For the rest, OJT was the most frequent source — for machine operators, assemblers, and inspectors, with OJT about twice as frequent as formal programs and four times as frequent as school programs.

Not only have formal skill-improvement training programs increased, they are also of longer duration (See Figure 7). In 1983 more than seven in 10 programs were under 12 weeks duration; by 1991, just one in three were that short. A large growth occurred in courses of from 13 to 25 weeks duration, with some growth in courses of more than a year in length. This growth in longer formal company training programs is the largest improvement to be seen in this Labor Department survey.

Workers were also asked about the type of training they received. The results can be seen in Figure 8. The most frequent form of training is for specific technical skills, double the next most frequent, computer-related training. Next is managerial or supervisory

Figure 7

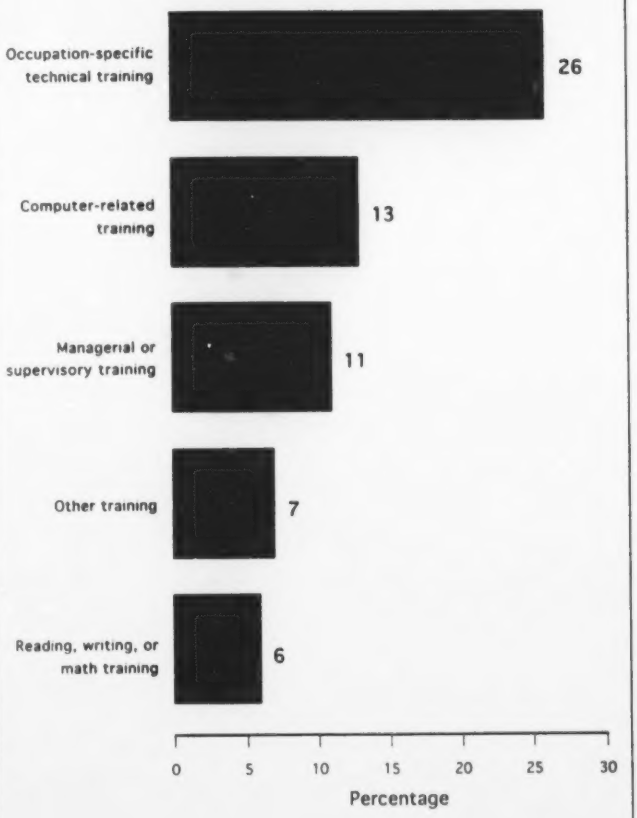
Duration of Formal Company Skill-Improvement Training, 1983 and 1991



Source: "How Workers Get Their Training: A 1991 Update," U.S. Department of Labor, Bureau of Labor Statistics, August 1992.

Figure 8

Type of Training, 1991



Source: "How Workers Get Their Training: A 1991 Update," U.S. Department of Labor, Bureau of Labor Statistics, August 1992.

training, and then training for miscellaneous other skills. Lastly, 6 percent of all workers had training in reading, writing, and mathematics.

This last place for training in literacy skills may come as a surprise in view of the drumbeat of concern about literacy problems in the workforce. Of course, many more workers likely need it than are getting it, and the 6 percent who receive training amounts to 6.6 million workers. A whole lot of that literacy training, however, is of an advanced variety, for about half of it went to executives, professionals, and technicians. The literacy training rate for sales and precision production and craft workers was 4 percent, and for service workers, machine operators, and assemblers, 3 percent. The computer-related training is concentrated in the same three top occupational categories and also in administrative support occupations.

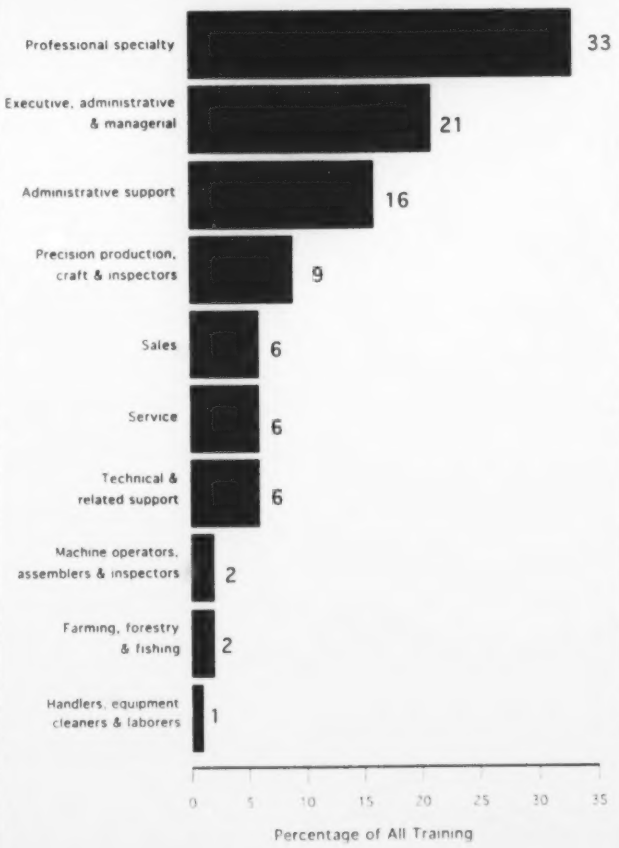
In the large categories representing workers in sales, administrative support, service, machine operation, assembly, and transportation, roughly one in five have received occupation-specific technical training on their current jobs. These occupations account for almost 60 million workers, more than half of all those employed in 1991. About 11.5 million of these workers have received training to improve their occupational skills; 48.5 million have not.

Who Pays?

Fifteen million workers were trained in schools to improve their skills in their current jobs, 13 percent of all those who were employed in 1991. Who pays? Employers paid for all, or shared the cost, for 6.3 million of them, paid the whole cost for 4.4 million, more than half the cost for 1.2 million, and less than half the cost for .7 million. Again, we see the training skewed to the top occupations. Fifty-four percent of employer-paid school training went to executives, managers, and professionals. Sixteen percent went to administrative support occupations. Just 6 percent went to sales workers, 6 percent to service workers, and 2 percent to machine operators, assemblers, and inspectors (See Figure 9).

Figure 9

Percentage of Workers Receiving Employer-Sponsored School Training, 1991



Source: "How Workers Get Their Training: A 1991 Update," U.S. Department of Labor, Bureau of Labor Statistics, August 1992.

Barriers to Participation

In a 1991 household survey, the Department of Education studied participation in adult education.* This was defined as education for all purposes, although 60 percent of all courses were taken to improve or advance on current jobs. Respondents were asked about barriers to participating in adult education.

Six out of 10 adults said they experienced barriers to participation. Of course, many who participated in adult education reported barriers also; they just found their way around them. Expansion of adult education and training, through the voluntary participation of adults seeking it, will depend on identifying the barriers and eliminating or reducing them.

The most frequently reported barrier has to do with work schedules, with 33 percent reporting this as a barrier. Workers find it difficult to match their work schedules to the schedules of educational offerings. This barrier can be overcome both through greater flexibility at the workplace to accommodate education and training, and also by education offerers adjusting their schedules to the times workers are available. Related to this was the fact that over a fourth of respondents found the meeting times for courses to be a problem.

Next in importance was cost, with 28 percent of respondents reporting this as a problem. Of all part-time courses taken, 34 percent were paid for by the individual, compared to 37 percent by employers, and 27 percent by government. Women were more likely to have to pay — 39 percent, compared to 29 percent of men.

Lack of child care was reported by 15 percent. Seventeen percent had a problem with the location of educational opportunities, and 15 percent cited a lack of information. Only 14 percent said they were not interested.

The barriers to participation are considerable, and while many workers do overcome them, a serious effort to increase worker education and training will require careful attention to them.

*Defined, in this usage, as all persons age 17 and over engaged in education on a part-time basis.

THE LITERACY OF JOB SEEKERS

The workplace literacy of America's job seekers has become a major national concern for three main reasons:

- We perceive the literacy requirements of jobs to be rising.
- We find American students lagging behind those in competitor nations.
- Employers report difficulties finding workers with the skills they need.

In the winter and spring of 1990, Educational Testing Service (ETS) conducted a large-scale literacy assessment for the U.S. Department of Labor. The assessment involved a representative sample of 20 million job seekers — those who had registered for unemployment insurance, applied for a job at the United States Employment Service, or enrolled in a program under the Job Training Partnership Act (JTPA).

Although most of the people identified for the survey sample were unemployed, some were seeking better jobs at the Employment Service, some were part-time workers seeking full-time jobs, and some were trying to escape poverty or gain steady employment through training programs. In one way or another, all these job seekers were involved with the employment and training programs of the federal government. There are, of course, millions more who seek work in other ways and do not come into contact with these programs, and they were not part of the study.

The results of this assessment were presented to the Labor Department and recently published in the report, *Beyond the School Doors: The Literacy Needs of Job Seekers Served by the U.S. Department of Labor.* The assessment was modeled after a 1985 survey of a national sample of young adults age 21 to 25 carried out by ETS for the National Assessment of Educational Progress (NAEP). Reports for both assessments were written by Irwin Kirsch, Ann Jungeblut, and Anne Campbell of ETS. Three kinds of literacy were assessed:

- *Prose* — Demonstrating the knowledge and skills associated with understanding and using information from editorials, newspaper articles, stories, poems, and the like
- *Document* — Demonstrating the knowledge and skills associated with locating and using information contained in job applications, payroll forms, bus schedules, maps, tables, indexes, and so forth
- *Quantitative* — Demonstrating skills involved in doing such tasks as entering cash and check amounts on a deposit slip, balancing a checkbook, completing an order form, and determining the amount of interest from an advertisement for a loan

The results of the assessment are reported on independent scales representing each type of literacy, with scores ranging from 0 to 500. The ability to deal with the printed word in Prose, Document, and Quantitative materials is a continuum; there is no single cut point that separates the literate from the illiterate. This way of looking at literacy is a major departure from previous surveys. The national sample of job seekers is arrayed along each of these three literacy scales. At certain points along the scales, examples of specific tasks are used to describe the kinds of things these job seekers are able to do at each level.

Levels of Literacy

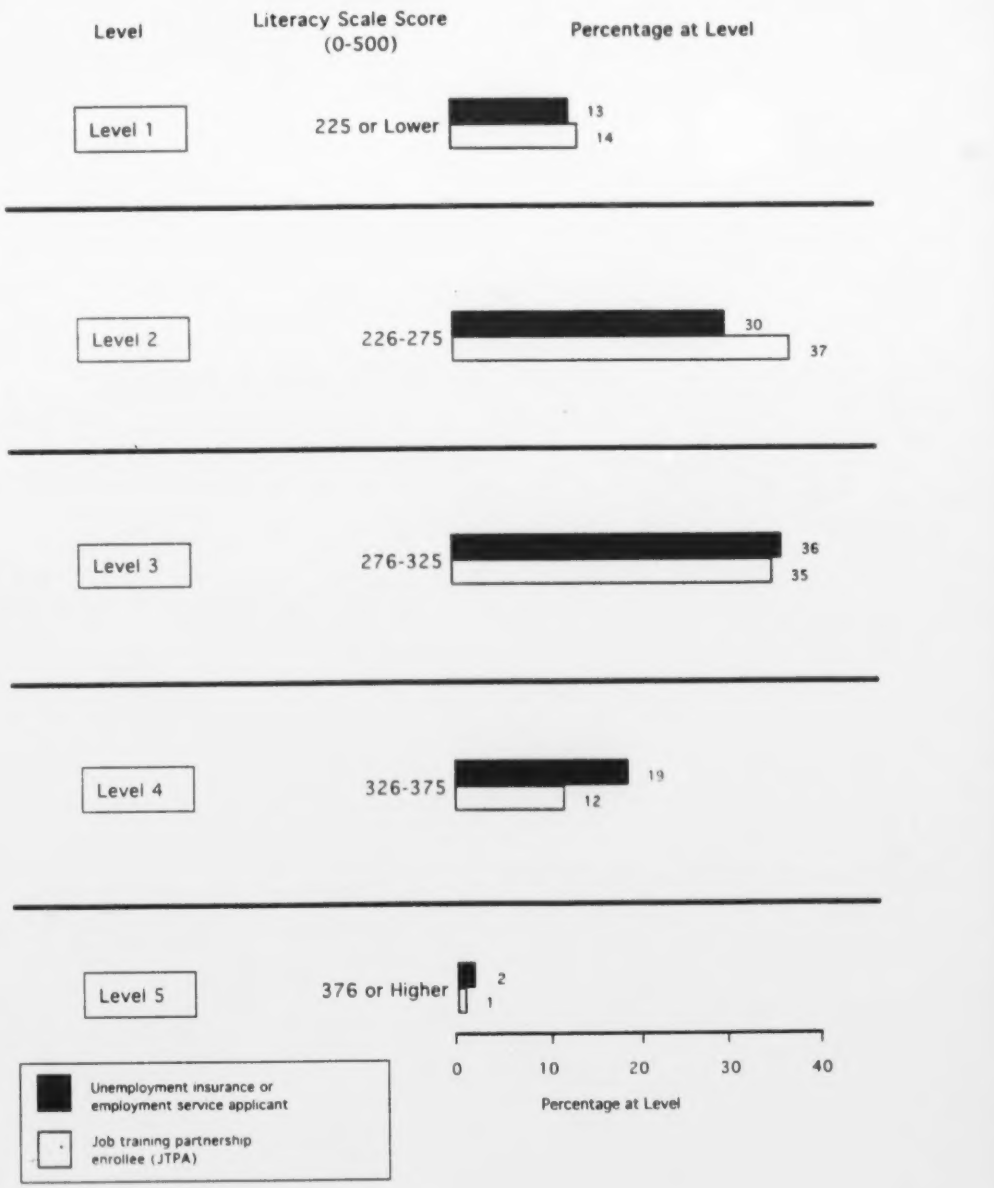
This report briefly summarizes the results for Prose and Quantitative Literacy. It describes in detail, however, the state of Document Literacy, because it is most closely related to the kinds of literacy tasks encountered in the workplace. For shorthand, we refer to the

Employment Service applicants and unemployment insurance recipients as "ES/UI" and the enrollees in the Job Training Partnership Act as "JTPA."

For Prose Literacy, 12 percent of the ES/UI population is at Level 1, scoring at or below 225. They can do things such as find a single piece of information in a sports article. Twenty-five percent of both the ES/UI and JTPA populations reach Level 2 (from 226 to 275). They are able to locate the correct information in the same sports article when faced with choosing between a correct answer and another distracting one (score of 253) or to interpret a directive in an appliance warranty (score of 273).

For Quantitative Literacy, almost 12 percent of the ES/UI population and 15 percent of the JTPA population are at Level 1 (below 225). They are able to perform tasks requiring simple addition or subtraction when the numbers are already entered on a document. Twenty-five percent of the ES/UI population and 31 percent of the JTPA population reach Level 2. They are able to perform tasks ranging from totaling two numbers on a bank deposit slip (score of 226, just barely reaching Level 2) to locating the appropriate shipping charges in a table before entering the correct amount on an order form and then calculating the total price (score of 265).

Figure 10
Document Literacy of Job Seekers, 1990



Example Task*	Requirements of Level**
Sign name on social security card (180) ***** Complete section of a job application (218)	Tasks typically require the reader to make a literal match between a feature of information stated in the question and information provided in the document
Underline sentence on child's dosage chart telling how often to give medicine (234) ***** From a pay stub, write "gross pay for this year to date" (261)	Tasks also involve a single feature of information, but several choices are available that seem plausible but are not correct, choices that may distract the respondent. Or the match may not be literal, requiring drawing inferences from the text
Use a table for bonds to determine how much to save for newborn child to have at least $55,000 by age 18 (309) ***** Use chart to select correct sandpaper (306)	Beyond the prior levels, the tasks involve integration of more than two features of information in more complex displays, with more distracting choices
Use dosage chart to find how much syrup is needed for a child 10 years old who weighs 50 pounds (needs to interpret an astensked note) (327)	Tasks go beyond Level 3 in the degree to which the reader must draw inferences. In the example task, the weight given is less than that of a typical 10 year old in the table and the astensked note must be interpreted to find that the dosage should be based on weight, not age, in such circumstances
Among four graphs, use one depicting business cycles to identify the time periods that represent the longest and shortest economic recoveries (386)	Tasks require a high degree of making inferences or developing knowledge from several documents. Tasks at this level require a broad range of skill at being able to process information with a high degree of consistency, using a wide range of documents

Source: Irwin S. Kirsch, Ann Jungeblut and Anne Campbell, "Beyond the School Doors: The Literacy Needs of Job Seekers Served by the U.S. Department of Labor," Educational Testing Service, September 1992.

*Tasks that people at this level have an 80 percent or more chance of performing correctly.
**Paraphrased from report authors' text

Figure 10 displays the five levels for Document Literacy. It shows the scale score ranges for each level and the percent of the ES/UI and JTPA populations at each level; provides representative tasks at each level; and describes the requirements of performing at that level.

Thirteen and 14 percent of the ES/UI and JTPA populations, respectively, are at Level 1, with scale scores of 225 or lower. They can perform tasks such as signing their names on a social security card (score of 180) or completing a section of a job application (score of 218). The requirements at this level are not demanding, although possessing at least these skills is almost essential for full participation in society.

Thirty percent of ES/UI recipients and 37 percent of the JTPA recipients are at Level 2 for Document Literacy, with scale scores from 226 to 275. They can perform tasks such as underlining a sentence on a child's dosage chart that tells how often to give a medicine (score 234). An example of a somewhat more difficult task is looking at a pay stub and identifying "gross pay for this year-to-date" (score of 261).

Thirty-six and 35 percent of the ES/UI and JTPA populations, respectively, are at Level 3, with scale scores between 276 and 325. Here, the complexity

of the tasks clearly advances. One requires using a table for bonds to determine how much to save for a new-born child to have at least $55,000 by age 18 (score of 309). Another consists of using a chart to select the correct grade of sandpaper (306). While these tasks are more advanced, they are of only moderate complexity and are likely to be pervasive in workplaces.

Just under a fifth of the ES/UI population and 12 percent of the JTPA population are at Level 4. One task at this level is using a dosage chart to find out how much syrup is needed for a 10-year-old child who weighs 50 pounds. The weight given is less than that of a typical 10-year-old, and the respondent must deal with an asterisked note explaining that in such circumstances the dosage should be based on weight, not age (score of 327).

Just over 2 percent of the ES/UI population and 1 percent of the JTPA population are at the highest level, Level 5. One task at this level involves looking at four different graphs and using the one depicting business cycles to identify the time periods that represent the longest and shortest economic recoveries (score of 386).

In sum, among the ES/UI and JTPA populations, about one in every eight is at the lowest level of literacy in terms of dealing with the documents typically encountered in life and work. These individuals are likely to have continuing difficulty securing stable employment at adequate earnings. For both populations, one in three ranks at Level 2. They are in a marginal zone — the lower rungs of the occupational ladder. See page 17 for a discussion of how these levels relate to literacy levels in various occupations.

Low-Level Literacy

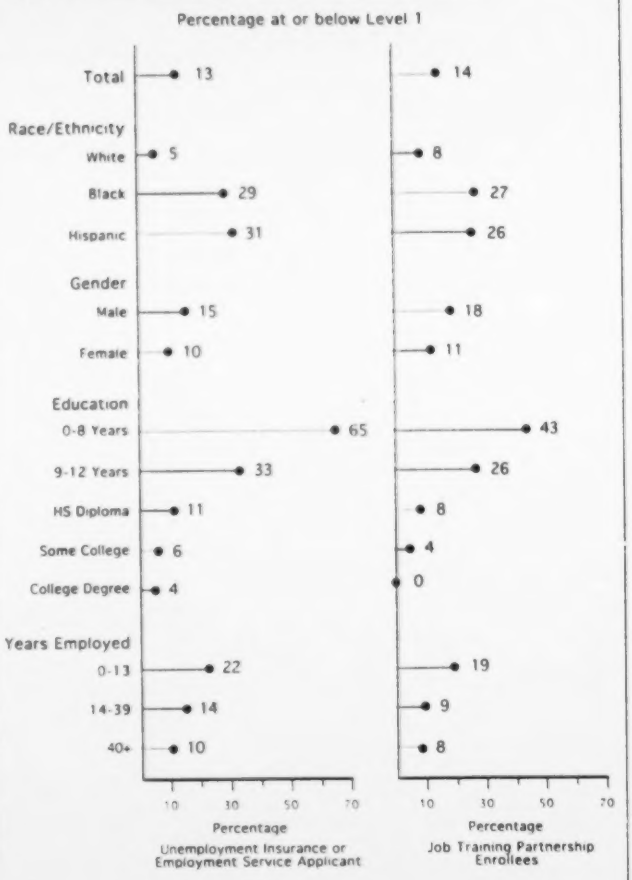
The figure of one in eight at Level 1 is sobering in terms of the high numbers of job seekers it represents. Some may consider it a small fraction. The fraction varies greatly, however, by population characteristics and, in certain populations, reaches rates that are alarming — even dismaying. These variations are shown in Figure 11.

Among the White jobseekers in the ES/UI and JTPA populations, 5 percent and 8 percent, respectively, are at Level 1. However, the percentages for Black and Hispanic job seekers are 29 and 31, respectively, for ES/UI, and 27 and 26 for JTPA. For the ES/UI population, that is about three in every 10.

For both ES/UI and JTPA populations, the percentage of males at Level 1 is 50 percent higher than the percentage of females.

Among the ES/UI and JTPA populations, the percentages at Level 1 reach 65 and 43, respectively, for those with less than nine years of school, and 33 and 26 for high school dropouts. Even for those with a high school diploma, approximately one in 10 are at Level 1 (somewhat more for ES/UI, somewhat less for JTPA). The rates drop to around one in 20 or less for those with some college education and drop further for those with college degrees.

Figure 11
Document Literacy of Job Seekers, 1990

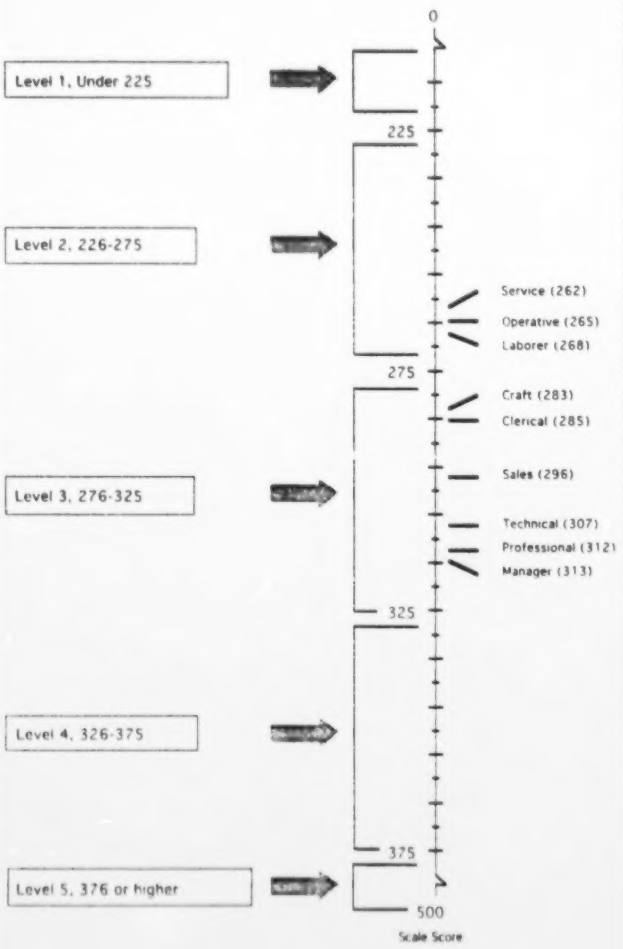


Source: Irwin S. Kirsch, Ann Jungeblut and Anne Campbell, "Beyond the School Doors: The Literacy Needs of Job Seekers Served by the U.S. Department of Labor," Educational Testing Service, September 1992.

As might be expected, the rate of low-level literacy in these populations is high for dropouts. However, the tasks they were unable to perform at Level 2 would appear to be of a nature that someone with 9 to 11 years of schooling should be able to do — such as identifying the right dosage for a child's medicine. The fact that one

Figure 12

Median Document Literacy Levels of Unemployment Insurance and Employment Service Applicants, by Occupation



Source: Irwin S. Kirsch, Ann Jungeblut and Anne Campbell, "Beyond the School Doors: The Literacy Needs of Job Seekers Served by the U.S. Department of Labor," Educational Testing Service, September 1992.

in 10 high school graduates fails to reach even this level of literacy raises questions about the current value of the diploma.

Not surprisingly, those who had worked the most during the prior year had the smallest percentage at Level 1. For those employed 13 weeks or less, one in five were at Level 1.

Occupations and Literacy

From this comprehensive assessment, we know in detail about the literacy levels of almost 20 million job seekers. We can describe the low literacy levels for an uncomfortably large proportion of these job seekers, and we can be reasonably sure that they will encounter recurring employment difficulties. But we do not have comparable information on what literacy levels specific jobs require, and therefore, there is no neat way to see how well the skills of job seekers match the jobs that are available in the American economy. In fact, we have no job vacancy measure either and know only about total employment by occupation and its change over time.

We can, however, get a sense of how literacy varies by occupation by examining data from this assessment of job seekers. We do know the occupations of the sample of 20 million people assessed. These data have limitations in that they pertain only to broad bands of occupations, and the literacy levels within each of these occupational bands vary considerably. Also, it is important to note that these are the literacy levels the respondents had when they were employed and not necessarily the levels their employers sought or wanted.

Nevertheless, by examining the literacy levels attained by job seekers in various occupations, we obtain an overview of the literacy levels of people in these occupations. Figure 12 shows, on the left, the position of each of the five levels of Document Literacy along the scale of 0 to 500. On the right, it shows the average (median) literacy level (score) of job seekers in various job families.

The average literacy level of service workers (the lowest) was 262* (refer to Figure 10 for examples of tasks workers can perform at these levels). This is within the band of scores that constitute Level 2 (from 226 to 275). Operatives and Laborers are also within that band at scores of 265 and 268, respectively.

The band for Level 3 ranges within scale scores of 276 to 325. The average of all the remaining occupations fits within this band. Craft and Clerical workers are at the lower end with average scale

*Workers in service *occupations* such as workers in households, food preparation, protective service workers, and personal services. This is narrower than the service sector of industry.

scores of 283 and 285, respectively. Sales Workers are in the middle with 296. Technical, Professional, and Managerial occupations are at the high end, with average scores of 307, 312, and 313, respectively.

Thirteen percent of the large ES/UI population is below Level 2, the level where service, labor, and operative jobs tend to be located. However, 30 percent of the Black and Hispanic members of this population were below Level 2. And, a total of three out of four Black job seekers and seven out of 10 Hispanic job seekers are below Level 3, where the Technical, Professional, and Manager occupations are clustered, compared with only three out of ten White job seekers. The low levels of Document Literacy put a significant proportion of job seekers at a serious disadvantage in the labor market, but these low levels are not evenly distributed. The rates for Black and Hispanic job seekers reach alarming proportions.

How Job Seekers Compare

In 1985, literacy was assessed for all young adults, age 21 to 25. In the 1990 assessment of job seekers, the ETS study drew the sample in order to break out 21- to 25-year-old job seekers, enabling a comparison with the nationally representative sample. Are those young adults who draw unemployment insurance benefits, apply for jobs at the public Employment Service, and enroll in JTPA programs less literate than the young adult population as a whole? Are the young adults who employers come in contact with through the ES/UI and JTPA programs seriously deficient?

On the Prose and Quantitative scale, there were few differences between the young ES/UI population and all young adults. However, on the Document scale, the scale most related to workplace tasks, there were differences at almost all levels, both for the ES/UI and the JTPA populations, with larger differences in the latter case. This can be seen in Table 1.

In the ES/UI young adult population, about 52 percent are at Levels 1 and 2 for Document Literacy, compared to 32 percent of all young adults. These programs, particularly those in JTPA, are dealing with considerable participant deficiencies in handling the kind of materials frequently encountered in workplaces.

What Makes A Difference?

In addition to assessing literacy on the three scales, the study administered an extensive questionnaire to those being assessed. From these questionnaires, we were able to learn about demographic and family background characteristics such as availability of literacy materials in the home while growing up, selection of high school curriculum, level of educational attainment, reading practices, amount of television watching, citizenship behavior, and employment experiences.

The authors undertook an extensive statistical analysis, called path analysis, to determine the extent to which these different variables contributed to literacy proficiency. This analysis enabled the authors to control for other variables while trying to determine the effects of a single variable. The following principal conclusions emerged:

- Gender itself did not predict literacy proficiency, when other differences were taken into account.
- Family background, particularly parent education, was predictive of the extent of reading materials in the home.
- Access to reading materials in the home (independent of parental education) had a significant impact on the choices made in selecting the academic curriculum in high school.
- The results were consistent with the hypothesis that reading practices, such as reading the news section of the newspaper, improve literacy proficiency.

The authors concluded that their analysis verified "the relationship (independent of background and educational process and attainment) between measured literacy proficiencies and labor market outcomes, such as occupational status and income."

Put simply, having access to reading materials, and reading them, can affect the level of literacy achievement, and higher literacy is associated with attaining better jobs with higher income.

TABLE 1
Document Literacy of 21- to 25-Year-Old Job Seekers Compared to All 21- to 25-Year-Olds

	ES/UI Applicants	JTPA Enrollees	All 21- to 25-Year-Olds*
Level 1	14%	10%	8%
Level 2	38	37	24
Level 3	31	40	40
Level 4	16	12	24
Level 5	1	1	4

*From the 1985 Young Adult Literacy Study.

OPTIONS FOR ACTION

Is the American investment in the education and training of its workforce sufficient for the U.S. to regain its historic productivity rate and become competitive in the world economy? Should America increase this investment? And if so, who should take responsibility for getting it raised? Unfortunately, the statistics reported earlier — and others that are available — do not give direct answers to these questions.

Do We Train Enough?

American firms generally do not keep complete records of investment in training; the cost of formal and informal training, including trainer time; trainee wages; and lost production. Rather, training is treated as an expense and not as an investment on which judgments are made about rates of return. Training costs are frequently included as operating costs and not tracked separately. The statistics that are collected in surveys give a limited and superficial view of the extent to which employed workers get training. And even if more information were available, determining whether the U.S. provides enough worker training would still be a matter of judgment, although judgment better informed.

The reason that such data fall short of specifying the action needed is that none of the data establish how much training there *should* be and the extent to which training can be seen as increasing productivity and production, and improving quality. How much training is *needed*, compared with how much is *provided*? It *is* clear that the investment the U.S. has made in discovering the real extent of training and the role that training plays in the bottom line of business and in America's competitive position has been slight.

There was a lapse of eight years between surveys of the training of employed workers (from 1983 to 1991), and a lapse of seven years between surveys of adult education generally (from 1984 to 1991). More attention is now being given to basic data and information needs, partially as a result of the National Education Goals Panel and its resource group work on adult literacy, lifelong learning, and worker training and education.

Based on what is discernable about the U.S. training investment, the history of U.S. approaches to human resource development, the two-decade-long slippage in U.S. productivity, and the larger training investments made by the U.S.'s competitors, those *who have* examined the situation in detail have concluded that the U.S. investment is inadequate. Their studies include the following:

- *America's Choice: High Skills or Low Wages!* The Commission on the Skills of the Workplace, National Center on Education and the Economy, June 1990
- *The Learning Enterprise*, by Anthony P. Carnevale and Leila J. Gainer, the American Society for Training and Development and the U.S. Department of Labor, May 1989
- *Training America, Strategies for the Nation*, by Anthony P. Carnevale and Janet W. Johnston, National Center on Education and the Economy and the American Society for Training and Development, 1989
- *Worker Training: Competing in the New Economy*, Office of Technology Assessment, Congress of the United States, September 1990
- *Rebuilding America's Workforce*, William H. Kolberg and Foster C. Smith, National Alliance of Business, 1992
- *Thinking for a Living*, Ray Marshall and Marc Tucker, Basic Books, 1992

The Office of Technology Assessment of the U.S. Congress, in its two-year-long study, came to this sobering conclusion in September 1990:

When measured by international standards, most American workers are *not* well trained... Our major foreign competitors place much greater emphasis on developing workforce skills at *all* levels.

The small segment of American firms that can be called "high performance" firms — leading the field in the U.S. and creating work teams that encourage worker participation in decision making — have made the judgment that human resource investments are a key element in a successful strategy. The *America's Choice* report estimates this sector at about 5 percent of U.S. industry; Anthony Carnevale cites a figure of 13 percent (this is likely a very liberal estimate: an Office of Technology Assessment funded study came up with a figure of 13 percent, but the definition included any form of experimentation with self-managed work teams).

No one seriously suggests that these vanguard firms are wrong to have made this decision. However, the view that American employers will seriously underinvest in training without government intervention does not go unchallenged. A belief in the business judgment of executives combined with a traditional view of classical economics often leads to a rejection of a view that intervention from public bodies is warranted. Business executives will argue that they know best how to allocate their resources and that they continually must meet the market test of performance at the bottom line. Classical economics reinforces the view that in a competitive economy, the "guiding hand" will result in the best decisions. The way decisions are made becomes the test of their appropriateness and soundness. And there is broad and strong commitment to this view of things throughout American society.

While the case for such strictly private decision making in free markets is compelling, there is reason to ask whether there are collective decisions that can spur investment, without infringing on these basic principles. It is reasonable to ask: Why has the guiding hand in other developed countries led employers to make larger investments in human resources? Other countries have been more successful in developing and accepting cooperative approaches between the business community and government. Ours has been much more of an adversarial relationship than a collaborative one.

Without some kind of collective approach, a large disincentive is established. Individual employers are very much aware that if they make a substantial investment in training a worker, that worker becomes attractive to other employers, and the investment may "walk" to another firm. The U.S. system has emphasized acquiring trained and experienced personnel through the recruitment and wage system — attracting workers who *already* have the requisite skills. Some collective action may be necessary to level the playing field, so that employers who lead in training investment do not lose their workers to "raiders."

But if there is to be a movement toward collective judgment it will be necessary to find an avenue that stimulates investment but leaves decisions on the critical details to the private sector. This would seem to command wide support, since those advancing strong arguments for spurring investment are not advocating a government regulatory approach.

Who will make these collective decisions? As explained above, the key participant is clearly employers, and however investment is stimulated, they will make the specific decisions about who and how to train. The postsecondary education system will have an expanded role, for it has emerged as the largest supplier of education and training to employed workers, after that which is supplied directly by employers. Where unions exist, they may have a shared role, and many unions have a large direct role now in supplying such services to members; unions have been strong advocates of education and training. The secondary education system will also be involved. Most importantly, workers themselves will be making choices about further training and education; while employers frequently require training as part of the job, the voluntary training that workers pursue on a part-time basis is a predominant source of skill improvement.*

Policy Options

What are the options for stimulating investment in worker training and education? A number have been discussed, both in the past and in the current debate about the appropriate action to take. The *tax credit* approach has been discussed for several decades, but no proposal at the national level has come close to enactment. We have had experience with the Investment Tax Credit since President Kennedy used it to stimulate growth; it has been used from time to time and its revival is now being debated. Some see an

* While the enrollment levels are out-of-date, the many sources of voluntary worker education and training are described in *Worklife Transitions: The Adult Learning Connection*, Paul E. Barton and The National Institute for Work and Learning, McGraw-Hill, 1982.

analogy between investment in training and investment in plant and equipment, or in research and development, because the returns on investment are spread years into the future. While there are similarities, some economists have argued that there are also differences and that treating the expenses of training as costs in computing corporate taxes makes further rewards unnecessary, and do not support the tax credit approach.

A general tax credit for investment would not be very well directed to specific training needs. Employers would enjoy a "windfall" of income for all the training they *now* pay for, with Treasury revenues going to pay for training already being performed. It would also mean that the nation would begin to subsidize training for the high paid, well-educated professional and managerial workers who are now getting the bulk of employer-provided training. More of this training might occur, without raising investment in front line workers. Some proposals would try to limit the windfall by only crediting training expenditures above prior levels; the problem then becomes one of equity, since employers who have invested would not get credit, and those who have lagged will.

Grappling with problems such as these, William H. Kolberg and Foster C. Smith, in their recent book *Rebuilding America's Workforce*, suggested a tax credit limited to training *front-line* workers, where investment has lagged. They say:

Any sort of tax relief for worker training would have to have safeguards to ensure that the right sort of training was being delivered to the right employees; managers, technical, professional, and sales personnel already receive the bulk of corporate training dollars and should not be eligible for tax relief.

Of course, to the extent that tax incentives narrow the training to workers employers have not invested in, employers will be less enthusiastic. They still have to make new outlays, a credit simply reduces their cost.

Another approach, also using the tax system, is the *training levy*, or what I would call a *levy-offset system*. A levy is imposed on all employers, usually a percentage of the payroll. The employer has a choice of spending that amount (or more, of course), on the firm's workers; what the firm spends offsets the levy. If the firm does not spend, the government collects the levy, and uses it to support training. If the firm spends some, but not as much as the levy, the government collects the difference between the expenditure and the amount of the levy. There are a lot of choices to be faced in how the government uses the funds collected. It is not likely that the federal government would do the training itself; it would be funneled to a variety of providers. Other federally-funded training efforts have provided considerable experience with this approach.

The tax credit was an incentive to training through a sharing of the cost. The levy is a heavier instrument. It forces the firm to either invest in training or pay for it, a "play or pay" approach. The approach is used in a number of countries around the world, notably France, Korea, Singapore, and Australia.* The U.S., however, has had no experience with a federal training levy, although a few states (described below) have used an earmarked tax. Few realize, however, that the U.S. has used a levy-offset system in the employment field. To create the Unemployment Insurance System, the Federal Unemployment Tax Act levied a 3 percent tax on all employers. Ninety percent of it was offset when a state enacted an unemployment insurance law and levied its own taxes on employers to support payments to unemployed workers (the other 10 percent was collected to pay for administrative costs of the system). All the states enacted U.I. laws; if they had not, the tax would have been collected by the U.S. Treasury and gone into general revenues. The situations are by no means parallel, but a levy and offset are not completely foreign to the U.S. experience.

The levy-offset system does require all employers to support training. Advocates of the approach argue that an employer who invested in training would not be at risk, or at least not to the same degree. Other employers are also investing, and the incentive to hire employees as a way to get trained employees "free" would be removed.

There is no evidence that a large majority of U.S. employers will support this approach. They will not likely embrace an approach in which government forces them to spend on worker training. If such an approach gains adherence in the Administration** and the Congress, the question will likely be how strongly business opposes it, and what alternatives they might find more acceptable. However, it should be noted that some major

* John H. Bishop has recently reviewed the French system's advantages and disadvantages and offers advice on ways of improving the approach in *The French Mandate to Spend on Training: A Model for the United States?* Working Paper 93-05, Cornell University, 1993.

**This approach was advanced by Governor Clinton in the 1992 Presidential campaign.

employers participated in the *America's Choice* report, including Corning, Apple, Eastman Kodak, and Circuit City. With strong leadership from major employers, perhaps support could grow.*

Another approach used abroad and in the U.S. is an *earmarked payroll tax*. The tax is collected and then spent on training. West Germany instituted this approach in 1969. Its 4 percent payroll tax was to be used for several purposes, including to help firms retrain workers. Five states — California, Rhode Island, Arkansas, New Jersey and Delaware — have collected an earmarked tax through the payroll tax used to fund state Unemployment Insurance programs. A couple of other states use a small payroll tax not associated with Unemployment Insurance. While these funds are mostly used to train unemployed workers, they are also used to train employed workers. This is particularly the case of the California Employment and Training Fund.**

New Jersey has a new earmarked tax for training that is substantial. Actually, it is an old tax being used for a new purpose. New Jersey is one of the few states that has an employee tax for Unemployment Insurance as well as an employer tax, in the amount of 1.25 percent. Recently, this 1.25 percent was redesignated for training and now goes into a training trust fund. The tax will generate $40 to $50 million per year and will be used both to retrain unemployed workers and employed workers in danger of losing their current jobs because their skills are becoming obsolete. It will also be used to assist employers in expanding training programs to upgrade the skills of their workers. The whole effort is called New Jersey's Workforce Development Partnership.

There has been a trend over the last several decades for the *states to employ training in their economic development strategies*; either to recruit firms to move into their states or to aid in the expansion of existing businesses. Typically these efforts are paid for from state general funds appropriated for economic development programs. A recent survey carried out for the Office of Technology Assessment identified 44 states operating one or more customized training programs, or 51 programs spending a total of $375 million. There is a wide range in the size of these programs, illustrated in Table 2.

TABLE 2
Characteristics of State-Financed Customized Training Programs

	Median	Low	High
Number of contracts	64	5	500
Average contract amount per program	$43,313	$6,500	$1,046,000
Range of total program expenditure among states	$2,400,000	$111,700	$100,000,000
Number of employees trained in FY 1989	3,940	99	55,243
Expenditure per enrollee	$460	$75	$3,461

Source: Peter A. Creticos and Robert G. Sheets, *State Financial Customized Training Programs: A Comparative State Survey*, 1990 (prepared for the Office of Technology Assessment).

The actual training is often delivered through community colleges and area vocational schools. The existence of such a widespread practice of government-aided industry training, at state initiative, is something to be taken into account when fashioning a national approach to enlarging the national investment. Obviously, in this state program context, employers have accepted a government role. But the government has entered the picture in different ways, through different funding arrangements, for differing training objectives, and using different delivery means. A single national approach may find less support than what has been, and can be, worked out state by state.

Remedial Education and Literacy Training

The discussion thus far has been largely of specific occupational skill training, although it often overlaps with remedial education in reading, writing and math, or in literacy.*** It is this remedial education and literacy training, and the need for

*Anyone seriously interested in the levy approach would profit from the analysis of options in *Worker Training* (pp 48-54), issued by the Office of Technology Assesment in 1990. There are possibilities for field tests and for initial use of the levy to establish the extent of existing training that represent partial steps towards a government role in stimulating training.

**The California Employment and Training fund has received some criticism of its funding of training for employed workers, that it was substituting public for private investment (Creticos and Sheets, *Evaluating State-Financed Workplace-Based Retraining Programs*, published by the National Commission for Employment Policy in 1992). The "substitution effect" will be debated in several of the approaches that use public dollars to suport private training.

***According to the Office of Technology Assessment, nearly all state customized training programs permit money to be used for remedial education.

it, that has had the most visibility in the last few years. There have been surveys to determine how much of this type of training employers are doing, but they have low response rates and the questions are asked in differing ways. A survey of employers by *Training Magazine* found that about 11 percent provided remedial education in reading, writing, arithmetic, or English as a Second Language. When "remedial education" was left undefined, 32 percent said they provided it. An American Management Association survey of its members found that while a third of businesses tested job applicants or current employees for basic skills, only 3 percent offered remedial training. Ninety percent said they refused to hire workers who failed basic skills tests.

Looking at all the surveys, the Office of Technology Assessment concluded:

Contrary to the claims sometimes made, firms in most industries probably spend very little of their total training budget on remedial education, opting instead to rely on outside, publicly supported Federal, State, and local basic education.

As the Office of Technology Assessment points out, there are exceptions, such as the banking industry, where a survey found that 38 percent had established remedial education programs. A few programs by very progressive firms have been widely publicized, creating an impression of more widespread activity than generally exists within industry.

A particularly promising approach to literacy training for workers is to deliver it in the context of a work environment, as workers actually need it to perform their jobs. The Work in America Institute has been operating the Job-Linked Literacy Project since 1990, carrying out studies of successful efforts in industry and offering assistance to businesses.

The last five or so years have seen expanding literacy efforts initiated at the state level, often supported by federal grants and demonstration programs. About 30 states have established bodies to coordinate literacy programs. According to the Office of Technology Assessment they do several things, but most attempt to develop an overall state strategy. Several states have launched workforce literacy initiatives to complement general literacy efforts. They include the Massachusetts Workplace Education Initiative, the Illinois Literacy Resource Department Project, and South Carolina's Initiative for Work Force Excellence. In 1989, Mississippi became the first state to enact a tax credit for employers who provide training in basic skills. Michigan has established a goal of improving basic skills for one million adults by the year 2000.

The Federal Adult Education Act has been an important source of support for the funding of state basic education efforts. The Office of Technology Assessment reports that at least 15 states have open-ended funding formulas for their basic education matching funds that can be used for workplace basic skill efforts. Other states have fixed appropriations.

There is a growing local-state-federal structure, often including employers, to get basic skills and literacy efforts in place. While literacy training is a largely unmet need, the nation is no longer starting from scratch.

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The national discussion of the adequacy of the training investment for the existing labor force has advanced to the point of several major studies and commissions concluding that the investment is inadequate, and recommending action. The major alternatives have been briefly described. The several tax measures involve considerable dollars and the entry of the federal government into a matter now left entirely to private business. However, the states have been active both in the area of occupational skill training and basic education and literacy training. They have used a variety of interventions, including earmarked taxes, general revenues, federal matching funds, and tax credits. At the state level a diversity of efforts exists.

While there are similarities in the commission and study findings regarding a need to increase investment, not all would agree. Some will argue that what we have now is a result of the totality of independent business judgment about business spending, with final judgment exercised by the marketplace, and that firms know what is best for the bottom line. If we tend toward consensus about the desirability of more training, a consensus in the business and economic community about an expanded federal presence has not emerged. New approaches, however, are increasingly emerging at the state level, establishing a structure that can be built on. And prestigious commissions and in-depth studies, by presenting strong arguments for increased worker education and training, may lead to a broadening consensus about the need for enlarging the training investment.

REFERENCE NOTES

Training the Workforce

This section is based, almost entirely, on the results of a 1991 household survey by the Bureau of Labor Statistics of the U.S. Department of Labor. The report, issued in August of 1992, is titled *How Workers Get Their Training: A 1991 Update*, Bulletin 2407, by Thomas A. Amirault. Statistics on barriers to adult education and training were collected by the National Center for Education Statistics in 1991. While the report was not available as this document went to press, data on barriers from the survey were reported in *The National Education Goals Report* for 1993, under Goal 5.

Data on comparisons with Japan and Germany are from the 1990 Office of Technology Assessment study, *Worker Training: Competing in the New International Economy*, and an article by Margaret Hilton, of the Office of Technology Assessment, entitled "Shared Training: Learning from Germany," published in the *Monthly Labor Review*.

The Literacy of Job Seekers

The source is an assessment of job seekers in U.S. Department of Labor Programs of Unemployment Insurance, the Employment Service, and the Job Training Partnership Act, carried out under contract with Educational Testing Service. There are two reports: *Beyond the School Doors: The Literacy Needs of Job Seekers Served by the U.S. Department of Labor*, by Irwin S. Kirsch, Ann Jungeblut, and Anne Campbell, and the full technical report, *Profiling the Literacy Proficiencies of JTPA and ES/UI Populations*, by Irwin S. Kirsch, et al. This section was previously published in *ETS Policy Notes*, by the ETS Policy Information Center, Summer 1992, titled *The Literacy of Job Seekers*.

Options for Action

Recommendations for stimulating business investment in training are discussed in six recent publications, listed on page 19. The estimate by Anthony P. Carnevale that 13 percent of American employers have organized employees in high performance work systems is from his article "What Training Means in an Election Year," *Training and Development, 1992*.

Statistics on state training programs come from a study by Peter A. Creticos and Robert G. Sheets, commissioned by the Office of Technology Assessment for its report *Worker Training: Competing in the New Economy*, September 1990. Other state programs described are largely from *Enhancing Skills for a Competitive World, Report of the Action Team on Lifelong Learning*, National Governors Association, 1992.

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PUBLICATIONS

Established in 1987 by the ETS Board of Trustees, the Policy Information Center is charged with serving as an influential and balanced voice in American education, preparing and publishing reports on important education topics.

Policy Information Reports

America's Smallest School: The Family, 1992, $5.50 (ED 349 320)

A national resolve to improve and recognize the family as an educational institution is critical to achieving the nation's education goals for the year 2000. This report pulls together many of the measures that reflect what goes on outside school and within the realm of the home in terms of educational achievement.

The State of Inequality, 1991, $4.50 (ED 340 716)

Legal and legislative struggles over school finance inequalities may change the face of education in this decade as much as any current education reform initiative. This report details disparities in education funding nationally and within the states. It analyzes data that teachers supplied about the availability of instructional resources and student learning. The new wave of court rulings on school finance is also reviewed.

Performance at the Top: From Elementary Through Graduate School, 1991, $6.00 (ED 333 052)

This report presents data on educational achievement that indicates how well the nation's top students are performing. The report scans student performance from the fourth grade through graduate school using indicators such as the National Assessment of Educational Progress, Advanced Placement (AP) participation, college and graduate school entrance tests, and higher education degrees.

The Education Reform Decade, 1990, $3.50 (ED 326 549)

The 1980s was a period marked by profound changes in education policy. This report summarizes the changes in elementary and secondary schools and assesses the results. It reviews a number of topics, including student achievement levels, teacher standards, and student retention statistics. It assesses progress made in eliminating achievement gaps between minority and majority groups and between males and females.

From School to Work, 1990, $3.50 (ED 320 947)

The U.S. is among the worst in the industrial world in helping students who don't go on to college make the transition from school to work. This report discusses student work during high school and differences between skills acquired in the classroom and those needed at the workplace. It also reviews the information processing skills of high school graduates, new efforts to integrate academic and vocational education, and the weaknesses of linkages between school and the workplace.

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The Center also publishes *ETS Policy Notes* (a newsletter) along with workbooks and other resources. Two recent examples are *Linking Educational Assessments: Concepts, Issues, Methods, and Prospects* (by Robert J. Mislevy) and *National Standards for Education: What They Might Look Like*.

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